

AMENDMENTS TO THE CLAIMS

1 (Currently Amended): A method of manufacturing a multi-layer printed wiring board comprising an internal layer circuit forming step, an outer layer circuit forming step, and a solder resist forming step,

wherein the internal layer circuit forming step and the outer layer circuit forming step comprise steps of:

providing a board coated with a patterning material;

coating the surface of the patterning material with a photosensitive film;

exposing the photosensitive film according to a predetermined conductive pattern;

forming an etching resist by removing a portion of the photosensitive film which is not exposed from the board;

removing the patterning material from the board according to the etching resist; and

removing the etching resist from the board, and

the solder resist forming step comprises steps of:

coating the surface of the board subjected to the outer layer circuit forming step with a photosensitive solder resist material;

coating the solder resist material with a photosensitive film;

~~forming a light shielding mask by irradiating a laser beam on the photosensitive film~~
according to a formed pattern of the solder resist, to form a light shielding mask having an exposed portion that absorbs an ultraviolet ray and an unexposed portion that does not absorb the ultraviolet ray;

exposing the solder resist material ~~through a portion of the photosensitive film not irradiated by the laser beam~~ to an ultraviolet ray through the unexposed portion of the light shielding mask;

removing the light shielding mask; and

removing the solder resist material which is not exposed due to the light shielding mask.

2 (Original): A method of manufacturing a multi-layer printed wiring board according to claim 1, wherein the laser beam has an output or a wavelength range such that the photosensitive film is exposed but the solder resist material is not exposed.

3 (Original): A method of manufacturing a multi-layer printed wiring board according to claim 1, wherein the photosensitive film forms the light shielding mask such that a portion on which the laser beam is irradiated is transformed to have such a nature that ultraviolet rays are shielded, and the ultraviolet rays are irradiated on the solder resist material through the light shielding mask in the exposure step.

4 (Original): A method of manufacturing a multi-layer printed wiring board according to claim 2, wherein the photosensitive film forms the light shielding mask such that a portion on which the laser beam is irradiated is transformed to have such a nature that ultraviolet rays are shielded, and the ultraviolet rays are irradiated on the solder resist material through the light shielding mask in the exposure step.

5 (Previously Amended): A method of manufacturing a multi-layer printed wiring board according to claim 1, further comprising a marking step comprising steps of:

coating a marking position on a board surface, after the solder resist forming step, with a photosensitive marking material;

coating the marking material with a photosensitive film;

forming a light shielding mask by irradiating a laser beam on the marking material according to marked information;

exposing the marking material by using the light shielding mask;

removing the light shielding mask; and

removing the marking material which is not exposed due to the light shielding mask.

6 (Previously Amended): A method of manufacturing a multi-layer printed wiring board according to claim 2, further comprising a marking step comprising steps of:

B) coating a marking position on a board surface, after the solder resist forming step, with a photosensitive marking material;

coating the marking material with a photosensitive film;

forming a light shielding mask by irradiating a laser beam on the marking material according to marked information;

exposing the marking material by using the light shielding mask;

removing the light shielding mask; and

removing the marking material which is not exposed due to the light shielding mask.

7 (Previously Amended): A method of manufacturing a multi-layer printed wiring board according to claim 3, further comprising a marking step comprising steps of:

coating a marking position on a board surface, after the solder resist forming step, with a photosensitive marking material;

coating the marking material with a photosensitive film;

forming a light shielding mask by irradiating a laser beam on the marking material according to marked information;

exposing the marking material by using the light shielding mask;

removing the light shielding mask; and

removing the marking material which is not exposed due to the light shielding mask.

b) 8 (Previously Amended): A method of manufacturing a multi-layer printed wiring board according to claim 1, further comprising a marking step comprising steps of:

coating a marking position on a board surface, after the solder resist forming step, with a photosensitive marking material;

irradiating a laser beam on the marking material according to marked information; and removing the marking material except for the marking material on a portion where the marking material is hardened by irradiation of the laser beam.

9 (Previously Amended): A method of manufacturing a multi-layer printed wiring board according to claim 2, further comprising a marking step comprising steps of:

coating a marking position on a board surface, after the solder resist forming step, with a photosensitive marking material;

irradiating a laser beam on the marking material according to marked information; and

removing the marking material except for the marking material on a portion where the marking material is hardened by irradiation of the laser beam.

10 (Previously Amended): A method of manufacturing a multi-layer printed wiring board according to claim 3, further comprising a marking step comprising steps of:

coating a marking position on a board surface, after the solder resist forming step, with a photosensitive marking material;

irradiating a laser beam on the marking material according to marked information; and

removing the marking material except for the marking material on a portion where the marking material is hardened by irradiation of the laser beam.

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11 (Previously Amended): A method of manufacturing a multi-layer printed wiring board according to claim 1, further comprising a marking step comprising steps of:

coating a marking position on a board surface, after the solder resist forming step, with a photosensitive marking material;

irradiating a laser beam on the marking material according to marked information; and

removing the marking material except for the marking material on a portion where the marking material is softened by irradiation of the laser beam.

12 (Previously Amended): A method of manufacturing a multi-layer printed wiring board according to claim 2, further comprising a marking step comprising steps of:

coating a marking position on a board surface, after the solder resist forming step, with a photosensitive marking material;

irradiating a laser beam on the marking material according to marked information; and
removing the marking material except for the marking material on a portion where the
marking material is softened by irradiation of the laser beam.

13 (Previously Amended): A method of manufacturing a multi-layer printed wiring board
according to claim 3, further comprising a marking step comprising steps of:

coating a marking coating position on a board surface, after the solder resist forming step,
with a photosensitive marking material;

irradiating a laser beam on the marking material according to marked information; and
removing the marking material except for the marking material on a portion where the
marking material is softened by irradiation of the laser beam.

Claims 14-16 (Canceled):

17 (Original): A method of manufacturing a multi-layer printed wiring board according to
claim 1, wherein, in the internal layer circuit forming step and the outer layer circuit forming step,
an etching resist is formed by using the same laser irradiation device as the laser irradiation device
used to form a light shielding mask in the solder resist forming step.

18 (Original): A method of manufacturing a multi-layer printed wiring board according to
claim 8, wherein photosensitive films of the same type are used in the internal layer circuit forming
step, the outer layer circuit forming step, and the solder resist forming step.

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19 (Original): A method of manufacturing a multi-layer printed wiring board according to claim 4, wherein, in the marking step, a light shielding mask for the marking step is formed by using the same laser irradiation device as the laser irradiation device used to form a light shielding mask in the solder resist forming step.

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